



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,332	06/30/2006	Bisong Cao	58578-8001.US01	8755
Perkins Coie 101 Jefferson Street Menlo Park, CA 94025			EXAMINER LEE, BENNY T	
			ART UNIT 2817	PAPER NUMBER
			MAIL DATE 05/16/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,332

Applicant(s)

CAO ET AL.

Examiner

Benny Lee

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4; 5-12, 16, 17, 22, 23 is/are rejected.
- 7) ☒ Claim(s) 13-15, 18-21 and 24-27 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB008)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Paper No(s)/Mail Date. ____
- 6) ☐ Notice of Informal Patent Application.
- 7) ☐ Other: ____

35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: Page 1, in the first full paragraph, second line therein, --a-- should be inserted prior to "superconductive" for grammatical clarity. Page 1, in the second full paragraph, 5th & 6th lines therein, --the-- should be inserted after each occurrence of "called" for grammatical clarity; 11th line therein, a --,-- should be inserted after "Commonly" for grammatical clarity; 13th line therein, --to-- should be inserted after "pass-band" for grammatical clarity. Page 2, line 8, "to come to" should be rephrased for idiomatic clarity. Page 3, lines 8, 9, "is learned by analyzing ..." should be rephrased for idiomatic clarity; lines 9, 11 --the-- should be inserted prior to "electric" (line 9) & "magnetic" (line 11), respectively for grammatical clarity. Page 6, lines 2, 4, "FIG.1" (line 2) & "FIG.2" (line 4) should be respectively separated for grammatical clarity. Page 7, line 6 & page 8, line 11, "Wherein the ..." should be respectively rephrased for idiomatic clarity. Page 7, line 16 & page 8, line 8, "said" should be rewritten as --the-- at each occurrence for idiomatic clarity.

The disclosure is objected to because of the following informalities: Page 1, second full paragraph, second line therein, note that "compart frequency" is vague in meaning and needs clarification; 9th line therein, note that "saltation" is vague in meaning and needs clarification. Page 3, line 1, note that the reference to "39/23.5 mm" is vague in meaning and needs clarification; line 2, note that "1, 2 ... 8" should be rewritten as --1, 2, 3, 4, 5, 6, 7 and 8-- for consistency with the labeling in FIG. 1; line 6, note that "a Wg wide gap" should be rephrased as

--a gap of width W_g -- for an appropriate characterization. Page 4, in the heading, note that "CONTENT" should be rewritten as --SUMMARY-- for consistency with PTO guidelines. Page 6, lines 2, 4, should --prior art-- be inserted prior to each occurrence of "superconductive" for an appropriate characterization? Page 7, next to last line & page 10, line 9, note that --(not shown)-- should be inserted after each occurrence of "substrate" & "LaAlO₃" should be rewritten as --LaAlO₃-- at each instance for appropriate characterizations. Page 12, line 6, note that the heading "FAVOURITE RESULTS" should be rephrased for an appropriate characterization. Note that the following reference labels and descriptions should be described in the specification: FIGS. 2, 5, 7, "Frequency (MHz)"; FIG. 2, {S₂₁ (dB), S₁₁ (dB)}; FIGS. 5, 7, "S Parameters (dB)". Appropriate correction is required.

The drawings are objected to because of the following: should FIGS. 1 & 2 be appropriately labeled as --PRIOR ART-- as to be commensurate with the description in the background of the invention.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the longer side of an open end of adjacent resonators being closer to the symmetrical axis (i.e. claim 8) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the

drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claims 8, 9, 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 8, 9, note that it is unclear how the recitation "for any two neighbouring U-type superconductive microstrip resonators" herein relate to the same recitation appearing in claim 7, from which these claims directly depend (e.g. the same neighbouring resonators, different neighbouring resonators, etc). Note that reference to "a shorter side" is vague in meaning, especially since claim 6 (from which these claims ultimately depend) does not define any "shorter side" Clarification is needed.

In claims 8, 9, 10, note that reference to "(the/a) longer side of an open end of ... resonator(s)" lacks strict antecedent basis, especially since claim 6 (from which these claims ultimately depend) does not define any "longer side".

The following claims have been found to be objectionable for reasons set forth below:

In claim 1, note that the recitation of "formed by folding" should be rephrased to avoid the inappropriate method step recitation.

In claims 7, 8, 9, note that "neighbouring" should be rewritten as --neighboring-- for an appropriate spelling.

In claims 11, 12, note that "of any one" should be deleted as being inappropriate.

In claims 12-27, note that "claims" should be correctly rewritten as --claim--.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2; 5, 6, 11, 16, 17, 22, 23 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by the Mansour paper.

The Mansour paper (Fig. 5) discloses a three pole hairpin (i.e. characterized by the bent U-shape configuration of each resonator) filter comprised of YBCO (i.e. a recognized high temperature superconductive material) film. As evident from the configuration in Fig. 5, the U-shaped hairpin resonators are configured in parallel to each other as well as coupled to L-shape input and output coupling lines. In particular with respect to claims 16, 17, 22 & 23, note that the U-shape hairpin resonators adjacent to the input/output couplings have a respective open end of the resonator aligned with the top of the corresponding L-shape input/output coupling line. Furthermore, as would have been known to those of ordinary skill in the art, U-shape hairpin resonators of the type depicted in Fig. 5 are inherently known to have an electrical length of one-half wavelength (for example, see the exemplary disclosure of U-shaped hairpin type resonators as being one-half wavelength resonators as disclosed in Figs. 2b of Hey-Shipton et al) and appropriate spacing between adjacent U-shape hairpin resonators, which provide the optimal operating condition for such a filter.

Claims 1, 2; 5, 6, 7, 11, 12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by the Setsune et al reference.

Setsune et al (Fig. 3) discloses a superconducting high frequency resonator and filter comprising a plurality of open conductive loops (e.g. 31, which are characterized by a bent U-shape configuration) arranged in parallel to each other. The respective resonators are connected to corresponding input/output lines (36, 37 as depicted in Fig. 3). As described in the abstract, the resonators are comprised of a copper oxide superconductive film (3). With respect to claim 7, as evident from Fig. 3, the plural resonators are axisymmetric about an imaginary vertically oriented line between the adjacent parallel resonators. Furthermore, as would have been known to those of ordinary skill in the art, U-shape resonators of the type depicted in Fig. 3 are inherently known to have an electrical length of one-half wavelength (for example, see the exemplary disclosure of U-shaped hairpin type resonators as being one-half wavelength resonators as disclosed in Figs. 2b of Hey-Shipton et al) and appropriate spacing (e.g. 35) between adjacent U-shape hairpin resonators, which provide the optimal operating condition for such a filter.

Claims 1-4; 5, 6, 10, 11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tsuzuki.

Tsuzuki (e.g. FIG. 1) discloses a filter (10) comprised of plurality of distributed microstrip elements (e.g. 12a-12s) of a bent U-shape hairpin configuration arranged in parallel to each other. Note that input and output lead or coupling lines (e.g. 12a1, 12s1) are respectively connected to resonators (12a, 12s). As disclosed at column 2, lines 33-35, the U-shape hairpin resonators each have a length of one half wavelength and as evident from Fig. 1, each U-shaped hairpin resonator have open ends thereof which are spaced differently, with respect to the recitations of claims 3, 4. Furthermore, as would have been known to those of ordinary skill in

the art, U-shape hairpin resonators of the type depicted in Fig. 1 are inherently known to have an electrical length of one-half wavelength (for example, see the exemplary disclosure of U-shaped hairpin type resonators as being one-half wavelength resonators as disclosed in Figs. 2b of Hey-Shipton et al) and appropriate spacing between adjacent U-shape hairpin resonators, which provide the optimal operating condition for such a filter.

Claims 13-15, 18-21, 24-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sagawa discloses a looped U- shape resonator used in a filter configuration. Hey-Shipton et al (e.g. Figs. 2a-2c) discloses the resonators (including the hair-pin resonator of Fig. 2b) as one-half wavelength resonators.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 571 272 1764.

**/BENNY LEE/
PRIMARY EXAMINER
ART UNIT 2817**

B. Lee